

## AGGREGATION BEHAVIOR IN A NEOTROPICAL OWLFly, *CORDULECERUS MACLACHLANI* (NEUROPTERA: ASCALAPHIDAE)<sup>1</sup>

Charles V. Covell Jr.<sup>2</sup>

**ABSTRACT:** A cluster of the owlfly species *Cordulecerus maclachlani* Selys was observed on a branch overhanging a tributary of the Comté River in French Guiana on March 30, 1986.

On March 30, 1986, I was travelling by motorized canoe up a narrow tributary of the Comté River in French Guiana, approximately 7 kilometers north of the village of Cacao. While the purpose of the ride was to reach a good spot for collecting the butterfly, *Morpho menelaus*, I observed a tightly-packed cluster of insects on the under side of leaves on a branch of a broad-leaved tree overhanging the stream. It was approximately 7 feet above water level in a heavily shaded area. The insects appeared to be owlflies (Ascalaphidae); but we passed the site before I had a chance to collect any. The time was about 10:00 AM. At about noon, we returned downstream, and the aggregation was still intact. I swung my insect net as our canoe passed beneath it, and secured 8 specimens. The insects were indeed owlflies. Some of them had entirely clear wings, while others had a hindwing pattern of large dark spots. While the number of owlflies comprising the aggregation is unknown, the group covered an irregular area roughly 30 cm<sup>2</sup>.

Later, Ellis G. MacLeod of the University of Illinois tentatively identified some of the series as *Cordulecerus maclachlani* Selys, and John D. Oswald of Cornell University later verified this determination. The species is polymorphic; but whether spotted and non-spotted morphs represent sexual dimorphism has not yet been established.

The present account is the first report of aggregation behavior in this species. However, Penny ([1982] 1981: 405) refers to a Dr. Engleman's report of an aggregation of *Cordulecerus elegans* at the tip of a branch at dusk in central Amazonia. Further, Philip J. DeVries (personal communication) has observed aggregation behavior in owlflies in Panama and Costa Rica. Among the 5 species in 3 genera he has recorded are 2 *Cordulecerus* species. He is investigating owlfly aggregation phenomena in greater depth.

While no such aggregation behavior has yet been described in North American species of Ascalaphidae, it appears that it may be widespread

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<sup>2</sup>Department of Biology, University of Louisville, Louisville, KY, 40292.

in neotropical species, particularly those in the genus *Cordulecerus*.

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#### LITERATURE CITED

Penny, N.D. [1982] (1981). Review of the generic level classification of the New World Ascalaphidae (Neuroptera). *Acta Amazonica* 11: 391-406.

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## SOCIETY MEETING OF MARCH 15, 1989

### NATURAL CONTROL OF THE GRAPE LEAFHOPPER IN CALIFORNIA VINEYARDS

By Dr. David W. Williams

The grape leafhopper, *Erythroneura elegantula*, is a native species that evolved on wild grape which grows on moist flood plains. It adapted quickly to introduced commercial grape varieties and soon became a pest in California vineyards. While it does not appear to diminish crop yields, its sheer abundance at times causes considerable damage to leaves and it can be a nuisance to grape harvesters. Insecticide spraying in the 1940's resulted in resistance and the appearance of secondary pests due to the elimination of natural controls. The mymarid wasp, *Anagrus epos*, is a parasite of leafhopper eggs and effectively controls the grape leafhopper in its normal riparian environment, but not always in the drier vineyard habitats. Dr. Williams of the USDA Beneficial Insects Laboratory in Newark, DE described a control strategy whereby an imported blackberry, a food plant of the native Blackberry leafhopper, was planted near vineyards. While grape is deciduous, blackberry is evergreen and thus can sustain year-round populations of leafhoppers and their parasites including *Anagrus*. Consequently, the population of *Anagrus* is higher earlier in the year and can parasitize grape leafhoppers in their first generation before they get out of control. The complex interplay of native and introduced plants, their pest, parasites of pests, and humans emphasized to the audience that there are few simple solutions to insect control problems.

In the general discussion preceding Dr. Williams' talk several members described recent lepidopteran experiences. Dr. Charles Mason attended a meeting in Mexico on the European corn borer. As a side trip, he and several other participants visited one of the overwintering sites of the monarch butterfly. He showed slides of the dense congregations that weigh down the limbs of spruce forests at an altitude above 10,000 feet. He expressed concern that local forestry practices threaten these overwintering sites. Howard Boyd visited and was quite impressed with the Day Butterfly Center at Calloway Gardens in Pine Mountain, GA. President Roger Fuester reported that during 1988 fewer than one million acres of forest were defoliated by gypsy moth caterpillars. This is the lowest level since the mid 1970's, and is considerably below the approximately 13 million acres defoliated in 1981.

Harold B. White  
Corresponding Secretary